

Table 1

Reaction Condition	Styrenic Copolymer (A)	Example				Comparative Example
		1	2	3	4	
Reaction Condition	Raw Material	(A-1)	(A-2)	(A-3)	(A-4)	(A-5)
	(Parts by Weight)	68	68	58	100	68
	AN Monomer	32	32	22	0	32
	N-PMI Monomer	0	0	20	0	0
	BMI Monomer	0.02	0.01	0.01	0.02	0
	Initiator	BPO	BPO	BPO/TX-29A	BPO	BPO
	Parts by Weight	0.02	0.02	0.015/0.005	0.02	0.02
	Chain Transfer Agent	TDM	TDM	TDM	TDM	TDM
	Reaction temperature (°C)	100/120	100/120	100/120	110/130/160	100/120
	Reaction Pressure (kg/cm <sup>2</sup> )	4.0/4.0	4.0/4.0	4.0/4.0	3.0/3.0/3.0	4.0/4.0
Analysis Result	Residence Time in Reactors (hr)	2	2	2	7	2
	Resin Composition	unit derived from ST	72	60	100	72
	(Parts by Weight)	unit derived from AN	28	20	0	28
	Residual BMI Monomer (ppm)	unit derived from N-PMI	0	20	0	0
	MZ (10 <sup>3</sup> )	unit derived from BMI	0.02	0.01	0.02	0
	MW (10 <sup>3</sup> )		N.D	N.D	N.D	N.D
	MZ/MW		130.5	58	112	39.9
	gM		31.8	22.1	35	23.3
	MI		4.1	2.62	3.2	1.71
	Maximum Extension Stress (Pa×10 <sup>9</sup> )		0.61	0.73	0.68	0.98
Physical Property	Color	40	42	29	80	45
		12.3	9.1	8.3	8.1	1.2
		51	49	67	40	48

ST :Styrene

AN :Acrylonitrile

N-PMI :N-phenyl maleimide

BMI :N,N'-4,4'-diphenyl methane bismaleimide

BPO :Benzoyl peroxide

TDM :t-dodecyl mercaptan

TX-29A :1,1-bis-(t-butyl peroxy)-3,3,5-trimethyl cyclohexane

Reaction Pressure: The data in table 1 means the pressure of first CSTR/second CSTR or first PFR/second PFR/third PFR, respectively

Table 2

Rubber Modified Thermoplastic Styrenic Resin Composition					Example 5	Comparative Example
Reaction Condition	Raw Material				(C-1)	3
	(Parts by Weight)				(C-2)	(C-3)
	ST Monomer				74	74
	AN Monomer				26	26
	BD Rubber				12	12
	BMI Monomer				0.02	0
	PGDA Monomer				0	0.02
	Initiator	type			BPO	BPO
	Chain Transfer Agent	Parts by Weight			0.05	0.05
		type			TDM	TDM
Analysis Result		Parts by Weight			0.3	0.3
	Reaction temperature (°C)				95/100/110/120	95/100/110/120
	Reaction Pressure (kg/cm2)				4.5/4/4/4	4.5/4/4/4
	Residence Time in Reactors (hr)				4	4
	Resin Composition	unit derived from ST			75	75
	(Parts byWeight)	unit derived from AN			25	25
	Rubber Content (weight%)	unit derived from BMI			0.02	0
	Residual BMI Monomer (ppm)				16	16
	MI				N.D	0
	Physical Property	Heat Stability(ΔYI)				32
Thickness Uniformity					45	46
The gloss on the surface of injected products after painting					○	x
					○	x
PGDA :Neopentyl glycol diacrylate						

Reaction temperature: The data in table 2 means the temperature of first CSTR/second CSTR/third CSTR/fourth CSTR, respectively

Reaction Pressure: The data in table 2 means the pressure of first CSTR/second CSTR/third CSTR/fourth CSTR, respectively

Table 6

		Example					Comparative Example	
Rubber Modified Thermoplastic Styrenic Resin Composition		6	7	8	9		5	6
Composition (parts by weight)	Rubber Graft Copolymer (B'-1)	(C-4)	(C-5)	(C-6)	(C-7)		(C-8)	(C-9)
	Rubber Graft Copolymer (B'-2)	20	20	0	0		20	0
	Styrenic Copolymer (A-1)	30	30	36	36		30	36
	Styrenic Copolymer (A-3)	50	0	64	0		0	0
	Styrenic Copolymer (A-5)	0	50	0	64		0	0
	EBS	0	0	0	0		50	64
Analysis Result	Rubber Content (weight%)	0.3	0.3	0.3	0.3		0.3	0.3
	Residual BMI Monomer (ppm)	17	17	18	18		17	18
Extrusion Condition	Extrusion temperature(°C)	N.D	N.D	N.D	N.D		N.D	N.D
	Die temperature(°C)	200-220	220-240	200-220	220-240		200-220	200-220
Physical Property	MI	220	240	220	240		220	220
	Heat Stability( $\Delta$ YI)	10.9	6	12.3	5.2		11.1	12.7
	Number of Contaminations	47	44	45	42		42	48
	Thickness Uniformity	1	3	2	3		2	0
	The gloss on the surface of injected products after painting	○	○	○	○		×	×
		○	○	○	○		×	×